3 QUALITY ASSURANCE MEASURES FOR ISOLATING DNA USING THE BIOMEK® 2000 AUTOMATION WORKSTATION

3.1 For a typing result to be reported the controls must work appropriately.

3.1.1 If a signal is detected at several loci in a reagent blank all samples associated with the reagent blank (i.e., samples extracted in conjunction with a reagent blank) will be considered inconclusive, and the sample(s) will be re-extracted **and/or** re-amplified if possible. If a faint band is observed at one locus, that locus will be deemed inconclusive, but the remainder of the loci will be reported for the evidentiary samples.

3.1.2 Evidence samples will be loaded into the 96 deep well plate in a format such that the evidence samples from one examiner will not be directly adjacent to the evidence samples from another examiner.

3.1.3 The plate blank in the well that directly follows an examiner's last evidence sample will be carried through the typing gel step to evaluate the isolation process for any possible contamination that may have occurred during the isolation step. Therefore, the examiner whose evidence samples were loaded into wells A1 through D2 represented in the following diagram will carry the plate blank in well E2 through the typing gel step.

3.1.3.1 If a signal is detected in the plate blank following the evidence samples and can be traced to a sample on the platform, all evidence samples loaded in the wells around the plate blank (i.e., box around well E2) will be evaluated for contamination.

3.1.3.2 If contamination at several loci is observed in a particular sample well, the sample will be considered inconclusive and the sample will be re-extracted, if possible.

3.1.3.3 If a faint band is observed at a single locus in a sample well, that locus will be deemed inconclusive for the evidentiary samples; however the remaining loci may be reported.

3.1.3.4 If there is no sign of contamination in a sample well, the sample may be carried through the remainder of the DNA process.

Plate with Unknowns - Knowns

A1	A2	A3 Blank	A4	A5 Blank	A6	A7	A8 Blank	A9 Known	A10	A11	A12
B1	B2	B3 Blank	B4	B5 Blank	B6	B7	B8 Blank	B9 Known	B10	B11	B12
C1	C2	C3 Blank	C4	C5 Blank	C6	C7	C8 Blank	C9 Known	C10	C11	C12
D1	D2	D3 Blank	D4	D5 Blank	D6	D7	D8 Blank	D9 Known	D10	D11	D12
E1	E2 Blank	E3 Blank	E4	E5 Blank	E6	E7	E8 Blank	E9 Known	E10	E11	E12
F1	F2 Blank	F3	F4	F5 Blank	F6	F7	F8 Blank	F9 Known	F10	F11	F12
G1	G2 Blank	G3	G4	G5 Blank	G6	G7	G8 Blank	G9 Known	G10	G11	G12
H1	H2 Blank	H3	H4	H5 Blank	H6	H7	H8 Blank	H9 Known	H10	H11	H12

3.1.4 When known/reference samples and evidence samples are loaded into the same 96 deep well plate the known/reference samples and evidence samples must be separated by a column of blanks (i.e., column number 8 shown above). The examiner whose evidence samples are loaded last will carry the plate blank directly following the evidence samples, as well as a plate blank in close proximity to the known/reference samples from the column containing the blanks separating the evidence and known/reference samples.

3.1.4.1 If a signal is detected in the plate blank following the evidence or the blank well between the known/reference samples and the evidence samples and can be traced to a sample on the platform, all evidence samples loaded in the wells around the plate blank will be evaluated for contamination.

3.1.4.2 If contamination at several loci is observed in a particular sample well, the sample will be considered inconclusive and the sample will be re-extracted, if possible.

3.1.4.3 If a faint band is observed at a single locus in a sample well, that locus will be deemed inconclusive for the evidentiary samples; however the remaining loci may be reported.

3.1.4.4 If there is no sign of contamination in a sample well, the sample may be carried through the remainder of the DNA process and all loci reported.

3.1.5 If evidence samples are loaded on both sides of a column of known/reference samples as represented in the following diagram, the evidence samples and the known/reference samples must be separated by a column of blanks (i.e., column numbers 5 and 7 shown below). In this situation the examiner whose evidence samples are loaded last on the left side of the known/reference samples will carry through the typing gel step the plate blank directly following the evidence samples, as well as a plate blank in close proximity to the known/reference samples from the column containing the blanks separating the evidence and known/reference samples (i.e., column number 5). The examiner whose evidence samples are loaded first on the right side of the known/reference samples will carry through the typing gel step the plate blank directly following the evidence samples, as well as a plate blank in close proximity to the known/reference samples from the column containing the blanks separating the known/reference and evidence samples (i.e., column number 7).

3.1.5.1 If a signal is detected in the plate blank following the evidence or blank well between the known/reference samples and the evidence samples and can be traced to a sample on the platform, all evidence samples loaded in the wells around the plate blank will be evaluated for contamination.

3.1.5.2 If contamination at several loci is observed in a particular sample well, the samples will be considered inconclusive and the sample will be re-extracted, if possible.

3.1.5.3 If a faint band is observed at a single locus in a sample well, that locus will be deemed inconclusive for the evidentiary samples; however the remaining loci may be reported.

3.1.5.4 If there is no sign of contamination in a sample well, the sample may be carried through the remainder of the DNA process and all loci reported.

Plate with Unknowns-Knowns-Unknowns

A1	A2	A3 Blank	A4	A5 Blank	A6 Known	A7 Blank	A8	A9	A10	A11	A12
B1	B2	B3 Blank	B4	B5 Blank	B6 Known	B7 Blank	B8	B9	B10	B11	B12
C1	C2	C3 Blank	C4	C5 Blank	C6 Known	C7 Blank	C8	C9	C10	C11	C12
D1	D2	D3 Blank	D4	D5 Blank	D6 Known	D7 Blank	D8	D9	D10	D11	D12
E1	E2 Blank	E3 Blank	E4	E5 Blank	E6 Known	E7 Blank	E8	E9	E10	E11	E12
F1	F2 Blank	F3	F4	F5 Blank	F6 Known	F7 Blank	F8	F9	F10	F11	F12
G1	G2 Blank	G3	G4	G5 Blank	G6 Known	G7 Blank	G8	G9	G10	G11	G12
H1	H2 Blank	H3	H4	H5 Blank	H6 Known	H7 Blank	H8	H9	H10	H11	H12

♦**END**